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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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09/160,657 09/25/98 LYDING

J 22010-135/IL

EXAMINER

MMC2/0504

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SUITE 3700

111 MONUMENT CIRCLE
INDIANAPOLIS IN 46204-5137

ART UNIT 2822 PAPER NUMBER

DATE MAILED: 2822

05/04/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/160,657

Applicant(s)

LYDING ET AL.

Examiner

Maria Guerrero

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 40-48, 60 and 61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 40-48, 60 and 61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 14) ☒ Notice of References Cited (PTO-892)
- 15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 17) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other: _____

Art Unit: 2822

DETAILED ACTION

This Office Action is in response to the Request for a CPA filed April 3, 2000.

Claims 1-39, 49-59 are canceled.

Claims 40-48, 60-61 are pending.

Continued Prosecution Application

The request filed on April 3, 2000 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/160,657 is acceptable and a CPA has been established. An action on the CPA follows.

Terminal Disclaimer

The terminal disclaimer filed on May 7, 1999 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 5,872,387 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 40-48 and 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lisenker et al. (PCT/US94/01669) (WO 94/19829) (cited by Applicant).

Art Unit: 2822

Lisenker et al. discloses a semiconductor device having a MOS device, the semiconductor device having an interface between a silicon layer and a gate oxide layer, the semiconductor device being treated with deuterium (pages 1-14).

As to the process limitations, note that a "product by process" claim is directed to the product per se, no matter how actually made and that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process.

As to the claimed "practical lifetime" note that the comparison to a hydrogen-passivated fails to structurally define over Lisenker et al.'s device.

Furthermore, it would have been obvious to a person of ordinary skill in the art to define the practical lifetime of Lisenker et al.'s device because this is well known in the art.

Claims 40-48 and 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over N. S. Saks et al. "Time-dependence of the interface trap build-up in deuterium-annealed oxides after irradiation".

N. S. Saks et al. teaches a semiconductor device comprising a field effect transistor having a Si-SiO₂ interface being treated with deuterium. N. S. Saks et al. discloses heating with deuterium at 900° C for 30 min (pages 3014-3016).

As to the process limitations, note that a "product by process" claim is directed to the product per se, no matter how actually made and that it is the final product per se

Art Unit: 2822

which must be determined in a "product by process" claim, and not the patentability of the process.

As to the claimed "practical lifetime" note that the comparison to a hydrogen-passivated fails to structurally define over Saks et al.'s device.

In addition, it would have been obvious to a person of ordinary skill in the art to define the practical lifetime of Saks et al.'s device because this is well known in the art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gregor et al. (U.S. 6,023,093) teaches a semiconductor device, which has being exposed to deuterium.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is (703) 305-0162. The examiner can normally be reached on Monday-Friday from 8:00 AM to 4:30 PM.

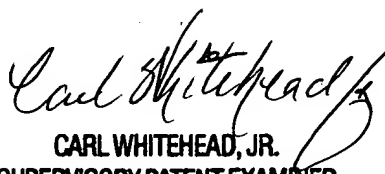
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, can be reached on (703) 308-4940. The fax phone number for this Group is (703) 308-7722.

Art Unit: 2822

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

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May 2, 2000


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800